



National
Library
of Medicine



My NC
[Sign In] [Regis]

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Book

Search PubMed

for

Go

Clear

Limits

Preview/Index

History

Clipboard

Details

Display Abstract

Show

20

Sort by

Send to

About Entrez

Text Version

All: 1 Review: 0

Entrez PubMed

Overview

Help | FAQ

Tutorial

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation Matcher

Batch Citation Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI (Cubby)

Related Resources

Order Documents

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

1: Insect Biochem Mol Biol. 2005 Apr;35(4):333-45.

Related Articles, Links

ELSEVIER
FULL-TEXT ARTICLE

Cloning and characterization of the G protein betagamma subunits from *Trichoplusia ni* (High Five cells).

Vadakkadathmeethal K, Felczak A, Davignon I, Collins J, Sunahara RK.

Department of Pharmacology, University of Michigan Medical School, 1301 Medical Sciences Research Building III, Ann Arbor, MI 48104 734-647-6277, USA.

Baculoviral-mediated expression in insect cells has become a method of choice where high-level protein expression is desired and where expression in *Escherichia coli* (E. coli.) is unsuitable. Genes of interest are inserted into the baculoviral genome of *Autographa californica* nuclear polyhedrosis virus (AcNPV) under the extremely strong, but very late polyhedron gene (PolH). The preferred host lines are derived from *Spodoptera frugiperda* (Sf9 or Sf21) or *Trichoplusia ni* (High Five, Invitrogen). Viral expression in insect cells is commonly used in the signal transduction field, due to the more than satisfactory capacity to express membrane proteins. However, co-association and/or co-purification of contaminating endogenous host G protein subunits, for example, may potentially threaten the functional and structural homogeneity of membrane preparations. The undefined G protein composition is complicated by the limited sequence data of either the *S. frugiperda* or *Trichoplusia ni* genomes. Here we report the isolation of cDNAs encoding two members of the heterotrimeric G protein family, Gbeta (Tn-Gbeta) and Ggamma (Tn-Ggamma), from *Trichoplusia ni*. Tn-Gbeta shares approximately 90% amino acid sequence identity with Gbeta from *Drosophila melanogaster* and 84% identity with mammalian Gbeta (human Gbeta1). Tn-Ggamma shares approximately 71% amino acid identity with *D. melanogaster* Ggamma1 and 42% identity with mammalian Ggamma (human Ggamma2). Tn-Gbetagamma is also functionally similar to mammalian Gbeta1gamma2 by virtue of their capacity to form a complex with mammalian Galpha subunits, support G-protein-dependent agonist binding to a mammalian G protein-coupled receptor (beta2-adrenergic receptor) and directly regulate effectors such as adenylyl cyclase.